OIPE

RAW SEQUENCE LISTING   DATE: 12/17/2001
PATENT APPLICATION: US/10/005,921   TIME: 12:21:12

Input Set : A:\PTO.DC.txt
Output Set: N:\CRF3\12172001\J005921.raw

```
   4 <110> APPLICANT: Allen, Keith D.
   5        Leviten, Michael W.
   7 <120> TITLE OF INVENTION: TRANSGENIC MICE CONTAINING CASH GENE
   8        DISRUPTIONS
  10 <130> FILE REFERENCE: R-714
C-->  12 <140> CURRENT APPLICATION NUMBER: US/10/005,921
C-->  12 <141> CURRENT FILING DATE: 2001-12-04
  12 <150> PRIOR APPLICATION NUMBER: US 60/254,902
  13 <151> PRIOR FILING DATE: 2000-12-11
  15 <160> NUMBER OF SEQ ID NOS: 4
  17 <170> SOFTWARE: FastSEQ for Windows Version 4.0
  19 <210> SEQ ID NO: 1
  20 <211> LENGTH: 2770
  21 <212> TYPE: DNA
  22 <213> ORGANISM: Mus musculus
  24 <400> SEQUENCE: 1
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  26 ctgtggttct gaacatggcc cagagccctg tgtctgccga ggtcattcac caggtggaag 120
  27 agtgtcttga tgaagacgag aaggagatga tgctcttcct gtgtagagat gtgactgaga 180
  28 acctggctgc acctaacgtc agggacctcc tggatagctt aagtgagaga ggccagctct 240
  29 cttttgctac cttggctgaa ttgctctaca gagtgaggcg gtttgacctt ctcaagagga 300
  30 tcttgaagac agacaaagca accgtggagg accacctgcg cagaaaccct cacctggttt 360
  31 ctgattatag ggtcctgctg atggagattg gtgagagctt agatcagaac gatgtatcct 420
  32 ccttagtttt ccttacaagg attacaaggg attacacagg cagaggcaag atagccaagg 480
  33 acaagagttt cttggatctg gtgattgaat tggagaaact gaatctaatt gcttcagacc 540
  34 aattgaattt gttagaaaaa tgcctgaaga acatccacag aatagacttg aacacaaaga 600
  35 tccagaagta cacccagtcc agccaaggag caagatcaaa tatgaatact ctccaggctt 660
  36 cgctcccaaa attgagtatc aagtataact caaggctcca gaatgggcga agtaaagagc 720
  37 caagatttgt ggaataccgt gacagtcaaa gaacactggt gaagacatcc atccaggaat 780
  38 caggagcttt tttacctccg cacatccgtg aagagactta caggatgcag agcaagcccc 840
  39 taggaatctg cttgatcatt gattgtattg gcaacgacac aaaatatctt caagagacct 900
  40 tcacttccct gggctatcat atccagcttt tcttgtttcc caagtcacat gacataaccc 960
  41 agattgttcg ccgatatgca agtatggccc aacatcaaga ctatgacagc tttgcatgtg 1020
  42 ttctggtgag cctaggaggc tcccaaagca tgatgggcag agatcaagtt cactcagggt 1080
  43 tctccttgga tcatgtcaag aacatgttca cggggggacac gtgcccttct ctcagaggga 1140
  44 agccaaagct ctttttttatt cagaactatg agtcgttagg tagccagttg gaagatagca 1200
  45 gcctggaggt agatgggcca tcaataaaaa atgtggactc taagcccctg caacccagac 1260
  46 actgcacaac tcacccagaa gctgatatct tttggagcct gtgcacagca gacgtatctc 1320
  47 acttggagaa gccctccagc tcatcctctg tgtatctgca gaagctctcc cagcagctga 1380
  48 agcaaggcag gagacgccca ctcgtggacc tccacgttga actcatggac aaagtgtatg 1440
  49 cgtggaacag tggtgtttcg tctaaggaga aatacagcct cagcctgcag cacactctga 1500
  50 ggaagaaact catcctggct cctacgtgag aacccagac cgttggtgtt cttggtatat 1560
  51 catccagggt ggcggcttgg agcagagctt ggcggttacg gctgcttctg gctgcttctg 1620
  52 gctctgccgt gagtcctggc ctaggttct cctgtgcaca ggcatgagcc gtaaccctgt 1680
  53 gcctgggaaa cgtctcactc ccgccgccgt gcctttacct ctctaaactt ccctacttac 1740
  54 attccttagt cggatgtttt gccagagtgt ggagaacagt aagacataaa cctattgttt 1800
  55 gtttgttttt ttgggggggga ggttatctac caagttatac caagttattg tatgggtgta 1860
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56 tagtgtatag tggttcaaga ttctgaatgt aacttgagac ttacctgagt ttgtcatgcg 1920
57 actgggtaaa ttgtttctat ggcacatcta atcatttaat aagtaattac ctcattaagt 1980
58 acccattgct tcaggacttt cacattggcc accaatttct gtgacccagc tccacattta 2040
59 tattctcttt cggcaaaacc aaatttcatt atgtctgttt aatatctaca gtctaatgct 2100
60 ttgtaagaca tctagatagg aaaaatagtt acccatgagc acaggagggc tggcctgacc 2160
61 ctcaccagct gtgcagtggc ttcggtgaaa ggagaatgag ccctactcct tgaaaggttg 2220
62 tagtgcttgg gagagcagtc tgtaccttgc ctgggcagca cagtagagcc agccccaaga 2280
63 acacaacagt gagtggggga gcttgccctg gttggctcag gatcaggaaa caggagggat 2340
64 gaccaacttg gggctttgag gtggcccacc ccagcatcca tatcatctgt gaactgccag 2400
65 agcctgtgaa ggggcgggtc ctgtagaact aaggctgcag gatctccatg acacagggca 2460
66 acaacagggt atctgagaag ggtccccgtg agggtccagt atttatagtg caccagaagc 2520
67 cagaggcctc ggatcagaca atgacccatt gcactgagta aagatgtaag tgaatgagtg 2580
68 aagatgtgtg ggcacacgga aatactgagg gacacacaca agcttttatg gagatgtttg 2640
69 tttgtttgtt tgtttgtttt ttgtttcttt ggcaggaaca gattgcaagg gcagagagta 2700
70 gataaggaag ctggagacat gagtgggggtt gggtgcatga tatagaattc acaaagaaaa 2760
71 aaaaaaaaaa                                                        2770
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73 <210> SEQ ID NO: 2
74 <211> LENGTH: 484
75 <212> TYPE: PRT
76 <213> ORGANISM: Mus musculus
78 <400> SEQUENCE: 2

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79 Met Ala Gln Ser Pro Val Ser Ala Glu Val Ile His Gln Val Glu Glu
80   1               5                  10                  15
81 Cys Leu Asp Glu Asp Glu Lys Glu Met Met Leu Phe Leu Cys Arg Asp
82              20                  25                  30
83 Val Thr Glu Asn Leu Ala Ala Pro Asn Val Arg Asp Leu Leu Asp Ser
84          35                  40                  45
85 Leu Ser Glu Arg Gly Gln Leu Ser Phe Ala Thr Leu Ala Glu Leu Leu
86      50                  55                  60
87 Tyr Arg Val Arg Arg Phe Asp Leu Leu Lys Arg Ile Leu Lys Thr Asp
88 65                  70                  75                  80
89 Lys Ala Thr Val Glu Asp His Leu Arg Arg Asn Pro His Leu Val Ser
90                  85                  90                  95
91 Asp Tyr Arg Val Leu Leu Met Glu Ile Gly Glu Ser Leu Asp Gln Asn
92                 100                 105                 110
93 Asp Val Ser Ser Leu Val Phe Leu Thr Arg Ile Thr Arg Asp Tyr Thr
94             115                 120                 125
95 Gly Arg Gly Lys Ile Ala Lys Asp Lys Ser Phe Leu Asp Leu Val Ile
96     130                 135                 140
97 Glu Leu Glu Lys Leu Asn Leu Ile Ala Ser Asp Gln Leu Asn Leu Leu
98 145                 150                 155                 160
99 Glu Lys Cys Leu Lys Asn Ile His Arg Ile Asp Leu Asn Thr Lys Ile
100                 165                 170                 175
101 Gln Lys Tyr Thr Gln Ser Ser Gln Gly Ala Arg Ser Asn Met Asn Thr
102             180                 185                 190
103 Leu Gln Ala Ser Leu Pro Lys Leu Ser Ile Lys Tyr Asn Ser Arg Leu
104         195                 200                 205
105 Gln Asn Gly Arg Ser Lys Glu Pro Arg Phe Val Glu Tyr Arg Asp Ser
106     210                 215                 220
```

```
107 Gln Arg Thr Leu Val Lys Thr Ser Ile Gln Glu Ser Gly Ala Phe Leu
108 225             230             235             240
109 Pro Pro His Ile Arg Glu Glu Thr Tyr Arg Met Gln Ser Lys Pro Leu
110             245             250             255
111 Gly Ile Cys Leu Ile Ile Asp Cys Ile Gly Asn Asp Thr Lys Tyr Leu
112             260             265             270
113 Gln Glu Thr Phe Thr Ser Leu Gly Tyr His Ile Gln Leu Phe Leu Phe
114             275             280             285
115 Pro Lys Ser His Asp Ile Thr Gln Ile Val Arg Arg Tyr Ala Ser Met
116         290             295             300
117 Ala Gln His Gln Asp Tyr Asp Ser Phe Ala Cys Val Leu Val Ser Leu
118 305             310             315             320
119 Gly Gly Ser Gln Ser Met Met Gly Arg Asp Gln Val His Ser Gly Phe
120             325             330             335
121 Ser Leu Asp His Val Lys Asn Met Phe Thr Gly Asp Thr Cys Pro Ser
122             340             345             350
123 Leu Arg Gly Lys Pro Lys Leu Phe Phe Ile Gln Asn Tyr Glu Ser Leu
124             355             360             365
125 Gly Ser Gln Leu Glu Asp Ser Ser Leu Glu Val Asp Gly Pro Ser Ile
126         370             375             380
127 Lys Asn Val Asp Ser Lys Pro Leu Gln Pro Arg His Cys Thr Thr His
128 385             390             395             400
129 Pro Glu Ala Asp Ile Phe Trp Ser Leu Cys Thr Ala Asp Val Ser His
130             405             410             415
131 Leu Glu Lys Pro Ser Ser Ser Ser Ser Val Tyr Leu Gln Lys Leu Ser
132             420             425             430
133 Gln Gln Leu Lys Gln Gly Arg Arg Arg Pro Leu Val Asp Leu His Val
134             435             440             445
135 Glu Leu Met Asp Lys Val Tyr Ala Trp Asn Ser Gly Val Ser Ser Lys
136         450             455             460
137 Glu Lys Tyr Ser Leu Ser Leu Gln His Thr Leu Arg Lys Lys Leu Ile
138 465             470             475             480
139 Leu Ala Pro Thr
143 <210> SEQ ID NO: 3
144 <211> LENGTH: 200
145 <212> TYPE: DNA
146 <213> ORGANISM: Artificial Sequence
148 <220> FEATURE:
149 <223> OTHER INFORMATION: Targeting Vector
151 <400> SEQUENCE: 3
152 cctgtgcttt gactctcaag cctaagtgtt ttgataagag gattctcttt caccacagag 60
153 tgtctctatt gcaagaactc tgagagaaat gaagagagtc ctcagcaatg atgttggctt 120
154 ctcgtggttc ccagagccct gcttaatgga tggagactgg acgagaacct ggctgctgtg 180
155 gttctgaaca tggcccagag 200
157 <210> SEQ ID NO: 4
158 <211> LENGTH: 200
159 <212> TYPE: DNA
160 <213> ORGANISM: Artificial Sequence
162 <220> FEATURE:
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163 <223> OTHER INFORMATION: Targeting Vector
165 <400> SEQUENCE: 4
166 cttggctgaa ttgctctaca gagtgaggcg gtttgacctt ctcaagagga tcttgaagac 60
167 agacaaagca accgtggagg accacctgcg cagaaaccct cacctggttt ctgattatag 120
168 gtaagtcatc ccctggggga ggggagaggg agtctagatg gttagggcag tgagaagacc 180
169 ccattgcttc ctcttctctc                                              200
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VERIFICATION SUMMARY
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L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date